

WO 03/106626

PCT/US03/18519

10/517710

SEQUENCE LISTING

<110> Temple University - Of The Commonwealth System of Higher Education
Khalili, Kamel

<120> Method of Cell Growth Inhibition with
Agnoprotein

<130> 6056-309 PC

<150> US 60/388,019

<151> 2002-06-12

<160> 28

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 71

<212> PRT

<213> JC virus

<400> 1

Met	Val	Leu	Arg	Gln	Leu	Ser	Arg	Lys	Ala	Ser	Val	Lys	Val	Ser	Lys
1				5					10					15	
Thr	Trp	Ser	Gly	Thr	Lys	Lys	Arg	Ala	Gln	Arg	Ile	Leu	Ile	Phe	Leu
			20					25					30		
Leu	Glu	Phe	Leu	Leu	Asp	Phe	Cys	Thr	Gly	Glu	Asp	Ser	Val	Asp	Gly
		35					40					45			
Lys	Lys	Arg	Gln	Arg	His	Ser	Gly	Leu	Thr	Glu	Gln	Thr	Tyr	Ser	Ala
		50				55					60				
Leu	Pro	Glu	Pro	Lys	Ala	Thr									
65					70										

<210> 2

<211> 216

<212> DNA

<213> JC virus

<400> 2

atggttcttc	gccagctgtc	acgtaaggct	tctgtgaaag	ttagtaaaac	ctggagtgga	60
actaaaaaaaa	gagctcaaag	gattttaatt	tttttgtag	aatttttgct	ggacttttgc	120
acaggtgaag	acagtgtaga	cgggaaaaaa	agacagagac	acagtgggtt	gactgagcag	180
acatacagtg	ctttgcctga	acaaaaagct	acatag			216

<210> 3

<211> 71

<212> PRT

<213> JC virus

<400> 3

Met	Val	Leu	Arg	Gln	Leu	Ser	Arg	Lys	Ala	Ser	Val	Lys	Val	Ser	Lys
1				5					10					15	
Thr	Trp	Ser	Gly	Thr	Lys	Lys	Arg	Ala	Gln	Arg	Ile	Leu	Ile	Phe	Leu
			20					25					30		
Leu	Glu	Phe	Leu	Leu	Asp	Phe	Cys	Thr	Gly	Glu	Asp	Ser	Val	Asp	Gly
		35					40				45				
Lys	Lys	Arg	Gln	Lys	His	Ser	Gly	Leu	Thr	Glu	Gln	Thr	Tyr	Ser	Ala

50 55
Leu Pro Glu Pro Lys Ala Thr
65 70

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<210> 4
<211> 71
<212> PRT
<213> JC virus
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<400> 4
Met Val Leu Arg Gln Leu Ser Arg Lys Ala Ser Val Lys Val Ser Lys
 1          5          10          15
Thr Trp Ser Gly Thr Lys Lys Arg Ala Gln Arg Ile Leu Ile Phe Leu
          20          25          30
Leu Glu Phe Leu Leu Asp Phe Cys Thr Gly Glu Asp Ser Val Asp Gly
          35          40          45
Lys Lys Arg Gln Arg His Ser Gly Leu Thr Glu Gln Thr Tyr Ser Ala
 50          55          60
Leu Pro Glu Pro Lys Ala Thr
65          70

```

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<210> 5
<211> 71
<212> PRT
<213> JC virus
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<400> 5
Met Val Leu Arg Gln Leu Ser Arg Lys Ala Ser Val Lys Val Ser Lys
  1          5          10          15
Thr Trp Ser Gly Thr Lys Lys Arg Ala Gln Arg Ile Leu Ile Phe Leu
      20          25          30
Leu Glu Phe Leu Leu Asp Phe Cys Thr Gly Glu Asp Ser Val Asp Gly
    35          40          45
Lys Lys Arg Gln Lys His Ser Gly Leu Thr Glu Gln Thr Tyr Ser Ala
  50          55          60
Leu Pro Glu Pro Lys Ala Lys
65          70
```

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<210> 6
<211> 71
<212> PRT
<213> JC virus
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<400> 6
Met Val Leu Arg Gln Leu Ser Arg Lys Ala Ser Val Lys Val Ser Lys
 1           5          10         15
Thr Trp Ser Gly Thr Lys Lys Arg Ala Gln Arg Ile Leu Ile Phe Leu
      20          25         30
Leu Glu Phe Leu Leu Asp Phe Cys Thr Gly Glu Asp Arg Val Asp Gly
    35          40         45
Lys Lys Arg Gln Lys His Ser Gly Leu Thr Glu Gln Thr Tyr Ser Ala
 50          55         60
Leu Pro Glu Pro Lys Ala Thr
65          70
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<210> 7

<211> 71
 <212> PRT
 <213> JC virus

<400> 7
 Met Val Leu Arg Gln Leu Ser Arg Lys Ala Ser Val Lys Val Ser Lys
 1 5 10 15
 Thr Trp Ser Gly Thr Lys Lys Arg Ala Gln Arg Ile Leu Ile Phe Leu
 20 25 30
 Leu Glu Phe Leu Leu Asp Phe Cys Thr Gly Glu Asp Ser Val Asp Gly
 35 40 45
 Lys Lys Arg Gln Lys His Arg Gly Leu Thr Glu Gln Thr Tyr Ser Ala
 50 55 60
 Leu Pro Glu Pro Lys Ala Thr
 65 70

<210> 8
 <211> 216
 <212> DNA
 <213> JC virus

<400> 8
 atggttcttc gccagctgtc acgtaaggct tctgtgaaag ttagtaaaac ctggagtgga 60
 actaaaaaaaa gagctcaaag gattttaatt tttttgtag aatttttgct ggatttttgc 120
 acaggtgaag acagtgtaga cgggaaaaaa agacagaaac acagtgggtt gactgagcag 180
 acatacagtg ctttgcctga accaaaagct acatag 216

<210> 9
 <211> 216
 <212> DNA
 <213> JC virus

<400> 9
 atggttcttc gccagctgtc acgtaaggct tctgtgaaag ttagtaaaac ctggagtgga 60
 actaaaaaaaa gagctcaaag gattttaatt tttttgtag aatttttgct ggacttttgc 120
 acaggtgaag acagtgtaga cgggaaaaaa agacagagac acagtgggtt gactgagcag 180
 acatacagtg ctttgcctga accaaaagct acatag 216

<210> 10
 <211> 216
 <212> DNA
 <213> JC virus

<400> 10
 atggttcttc gccagctgtc acgtaaggct tctgtgaaag ttagtaaaac ctggagtgga 60
 actaaaaaaaa gagcccaaag gattttaatt tttttgtag aatttttgct ggacttttgc 120
 acaggtgaag acagtgtaga cgggaaaaaa agacagaaac acagtgggtt gactgagcag 180
 acatacagtg ctttgcctga accaaaagct aaatag 216

<210> 11
 <211> 216
 <212> DNA
 <213> JC virus

<400> 11
 atggttcttc gccagctgtc acgtaaggct tctgtgaaag ttagtaaaac ctggagtgga 60
 actaaaaaaaa gagctcaaag gattttaatt tttttgtag aatttttgct ggacttttgc 120
 acaggtgaag acagagttaga cgggaaaaaa agacagaaac acagtgggtt gactgagcag 180
 acatacagtg ctttgcctga accaaaagct acatag 216

<210> 12
 <211> 216
 <212> DNA
 <213> JC virus

<400> 12
 atgggtcttctc gccagctgtc acgtaaggct tctgtgaaag ttagtaaaac ctggagtgga 60
 actaaaaaaaa gagctcaaag gattttaatt tttttgtag aatttttgct ggacttttgc 120
 acaggtgaag acagtgtaga cgggaaaaaa agacagaaac acagagggtt gactgagcag 180
 acatacagtg ctttgcctga accaaaagct acatag 216

<210> 13
 <211> 71
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> JCV agnoprotein consensus sequence

<221> VARIANT
 <222> 45
 <223> Xaa=Ser or Arg

<221> VARIANT
 <222> 53
 <223> Xaa=Lys or Arg

<221> VARIANT
 <222> 55
 <223> Xaa=Ser or Arg

<221> VARIANT
 <222> 56
 <223> Xaa=Gly or None

<221> VARIANT
 <222> 57
 <223> Xaa=Leu or None

<221> VARIANT
 <222> (58)...(58)
 <223> Xaa=Thr or None

<221> VARIANT
 <222> (59)...(59)
 <223> Xaa=Glu, Gln or None

<221> VARIANT
 <222> (60)...(60)
 <223> Xaa=Gln or None

<221> VARIANT
 <222> (61)...(61)
 <223> Xaa=Thr, Arg, Lys or None

<221> VARIANT
 <222> (62)...(62)
 <223> Xaa=Tyr or None

<221> VARIANT

<222> (63)...(63)

<223> Xaa=Ser or Gly

<221> VARIANT

<222> (71)...(71)

<223> Xaa=Thr or Lys

<400> 13

Met	Val	Leu	Arg	Gln	Leu	Ser	Arg	Lys	Ala	Ser	Val	Lys	Val	Ser	Lys
1				5					10					15	
Thr	Trp	Ser	Gly	Thr	Lys	Lys	Arg	Ala	Gln	Arg	Ile	Leu	Ile	Phe	Leu
			20					25					30		
Leu	Glu	Phe	Leu	Leu	Asp	Phe	Cys	Thr	Gly	Glu	Asp	Xaa	Val	Asp	Gly
		35					40					45			
Lys	Lys	Arg	Gln	Xaa	His	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Ala
		50				55						60			
Leu	Pro	Glu	Pro	Lys	Ala	Xaa									
65					70										

<210> 14

<211> 74

<212> PRT

<213> BK polyomavirus

<400> 14

Met	Phe	Cys	Glu	Pro	Lys	Asn	Leu	Val	Val	Leu	Arg	Gln	Leu	Ser	Arg
1				5					10					15	
Gln	Ala	Ser	Val	Lys	Val	Gly	Lys	Thr	Trp	Thr	Gly	Thr	Lys	Lys	Arg
			20					25					30		
Ala	Gln	Arg	Ile	Phe	Ile	Phe	Ile	Leu	Glu	Leu	Leu	Leu	Glu	Phe	Cys
		35					40					45			
Arg	Gly	Glu	Asp	Ser	Val	Asp	Gly	Lys	Asn	Lys	Ser	Thr	Thr	Ala	Leu
		50				55					60				
Pro	Ala	Val	Lys	Asp	Ser	Val	Lys	Asp	Ser						
65					70										

<210> 15

<211> 66

<212> PRT

<213> BK polyomavirus

<400> 15

Met	Val	Leu	Arg	Gln	Leu	Ser	Arg	Gln	Ala	Ser	Val	Lys	Val	Gly	Lys
1				5					10					15	
Thr	Trp	Thr	Gly	Thr	Lys	Lys	Arg	Ala	Gln	Arg	Ile	Phe	Ile	Phe	Ile
			20					25					30		
Leu	Glu	Leu	Leu	Leu	Glu	Phe	Cys	Arg	Gly	Glu	Asp	Ser	Val	Asp	Gly
		35					40					45			
Lys	Asn	Lys	Ser	Thr	Thr	Ala	Leu	Pro	Ala	Val	Lys	Asp	Ser	Val	Lys
		50				55					60				
Asp	Ser														
65															

<210> 16

<211> 21

<212> PRT

<213> BK polyomavirus

<400> 16

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Met Val Leu Arg Gln Leu Ser Arg Gln Ala Ser Val Lys Leu Gly Lys
 1           5           10           15
Thr Trp Thr Gly Thr
                20
```

<210> 17

<211> 62

<212> PRT

<213> Simian virus 40

<400> 17

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Met Val Leu Arg Arg Leu Ser Arg Gln Ala Ser Val Lys Val Arg Arg
 1           5           10           15
Ser Trp Thr Glu Ser Lys Lys Thr Ala Gln Arg Leu Phe Val Phe Val
                20           25           30
Leu Glu Leu Leu Leu Gln Phe Cys Glu Gly Glu Asp Thr Val Asp Gly
                35           40           45
Lys Arg Lys Lys Pro Glu Arg Leu Thr Glu Lys Pro Glu Ser
                50           55           60
```

<210> 18

<211> 225

<212> DNA

<213> BK polyomavirus

<400> 18

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atgttttgcg agcctaagaa tcttgtggtt ttgcgccagc tgtcacgaca agcttcagtg 60
aaagttagta aaacctggac tggaactaaa aaaagagctc agaggatttt tatTTTTtatt 120
ttagagcttt tgctggaatt ttgtagaggt gaagacagtg tagacgggaa aaacaaaagt 180
accactgctt tacctgctgt aaaagactct gtaaaagact cctag 225
```

<210> 19

<211> 201

<212> DNA

<213> BK polyomavirus

<400> 19

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atggttctgc gccagctgtc acgacaagct tcagtgaag ttggtaaaac ctggactgga 60
acaaaaaaaa gagctcagag gatttttatt tttatttttag agcttttgct ggaattttgt 120
agaggtgaag acagtgtaga cgggaaaaac aaaagtacca ctgctttacc tgctgtaaaa 180
gactctgtaa aagactccta g 201
```

<210> 20

<211> 63

<212> DNA

<213> BK polyomavirus

<400> 20

```
atggttctgc gccagctgtc acgacaagct tctgtgaaac ttggtaaaac ctggactgga 60
aca 63
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<210> 21

<211> 189

<212> DNA

<213> Simian virus 40

<400> 21
 atggtgctgc gccggctgtc acgccaggcc tccgttaagg ttcgtaggtc atggactgaa 60
 agtaaaaaaa cagctcaacg cctttttgtg tttgttttag agcttttgct gcaattttgt 120
 gaaggggaag atactgttga cgggaaacgc aaaaaaccag aaaggttaac tgaaaaacca 180
 gaaagttaa 189

<210> 22
 <211> 64
 <212> PRT
 <213> JC virus

<400> 22
 Met Val Leu Arg Gln Leu Ser Arg Lys Ala Ser Val Lys Val Ser Lys
 1 5 10 15
 Thr Trp Ser Gly Thr Lys Lys Arg Ala Gln Arg Ile Leu Ile Phe Leu
 20 25 30
 Leu Glu Phe Leu Leu Asp Phe Cys Thr Gly Glu Asp Ser Val Asp Gly
 35 40 45
 Lys Lys Arg Gln Lys His Ser Gly Ala Leu Pro Glu Pro Lys Ala Thr
 50 55 60

<210> 23
 <211> 195
 <212> DNA
 <213> JC virus

<400> 23
 atggttcttc gccagctgtc acgtaaggct tctgtgaaag ttagtaaaac ctggagtggga 60
 actaaaaaaaa gagctcaaag gattttaatt tttttgtag aatttttgct ggatttttgc 120
 acaggtgaag acagtgtaga cgggaaaaaa agacagaaac acagtgggtgc ttgcctgaa 180
 ccaaaagcta catag 195

<210> 24
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Protein Transduction Domain

<400> 24
 Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg
 1 5 10

<210> 25
 <211> 34
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 25
 acgtccagga tccatgggtc ttcgccagct gtca 34

<210> 26
 <211> 34

<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 26
acgtccagaa ttcctatgta gcttttggtt cagg 34

<210> 27
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 27
tatgcggccg ctaatacgac tcactatagg 30

<210> 28
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 28
tagaataggg ccctctagat gcatgctcga 30